

TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

TREATMENT OF MLLW MERCURY WASTES

Identification No.: RL-MW018

Date: October 2001

Program: Waste Management

OPS Office/Site: Richland Operations Office/Hanford Site

PBS No.: RL-CP02

Waste Stream: 3470 – Commercial Stabilization Feed

TSD Title: TBD

Operable Unit (if applicable): N/A

Waste Management Unit (if applicable): N/A

Facility: Future M-91 Facility.

Priority Rating:

This entry addresses the “Accelerated Cleanup: “Paths to Closure” (ACPC) priority:

- ☐ 1. Critical to the success of the ACPC.
- ☒ 2. Provides substantial benefit to ACPC projects (e.g., moderate to high life-cycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays).
- ☐ 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

Need Title: Treatment of MLLW Mercury Wastes.

Need/Opportunity Category: *Technology Need* -- There is no existing or currently identified technology capable of solving the Site’s problem (i.e., technology gap exists, no baseline approach has been identified).

Need Description: Develop and demonstrate a technology for treatment of CH MLLW mercury wastes to meet LDR. Two categories of mercury waste exist; high mercury subcategory waste with greater than 260 ppm Hg sludge and solids, and amalgamated mercury (approximately two-thirds of existing mercury is amalgamated, but does not meet RCRA treatment standards within the LDR.

Schedule Requirements:

Earliest Date Required: 2007

Latest Date Required: 2012

2012 is the currently established date for the Site being “current” in waste treatment.

Problem Description: The mercury waste stream does not meet established LDR treatment standards and requires treatment prior to disposal.

Potential Life-Cycle Cost Savings of Need (in \$000s) and Cost Savings Explanation:
No measurable cost savings are expected. This need is to establish method to treat a waste stream where no method currently exists

Benefit to the Project Baseline of Filling Need: Provide baseline process for timely treatment of mercury waste.

Relevant PBS Milestone: None

Functional Performance Requirements: The technology must be able to treat CH MLLW mercury to meet LDR.

Work Breakdown Structure (WBS) No.:	TIP No.:
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1.2.2	N/A
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Justification For Need:

Technical: No DOE or commercial capability is known to exist to treat MLLW mercury.

Regulatory: The mercury waste stream does not meet established LDR treatment standards and requires treatment prior to disposal.

Environmental Safety & Health: Mercury is a hazardous material.

Cultural/Stakeholder Concerns: Disposal or treatment of CH MLLW mercury waste is an expected outcome.

Other: N/A.

Current Baseline Technology: No capability exists to treat CH MLLW mercury waste to meet LDR.

End-User: Waste Management.

Contractor Facility/Project Manager: TBD.

Site Technical Point-of-Contact: Dale Black, Fluor Hanford, Inc. (FH), (509) 376-8458, Fax (509) 372-1441, Dale_G_Black@rl.gov.

DOE End-User/Representative Point-of-Contact: Kevin Leary, DOE-RL, (509) 373-7285, Fax (509) 372-1926, Kevin_D_Leary@rl.gov.

Waste volume, m ³	Current - 2 m ³
Waste form	Mercury subcategory and partially amalgamated waste streams
Waste stream I.D.	3490
Contaminants and co-contaminants	Alpha, beta and gamma
Function of technology	Dispose of mercury waste
Source category	Various Hanford Site programs